

Claims

Cancel claim 1.

2. (New) An apparatus comprising:

an elongated nozzle having an elongated opening defined along its length by a flexible back seal and a metering surface defined with respect to an upward direction of travel of a substrate or roll past the elongated opening, the substrate or roll having a width, the direction of travel such that the substrate or roll first encounters the flexible back seal and later encounters the metering surface, the elongated opening having first and second ends separated by a distance, the distance less than the width of the substrate or roll; the nozzle defining a back direction away from the substrate or roll and a front direction toward the substrate or roll;

a first end seal at the first end;

a second end seal at the second end;

the first seal comprising inner and outer walls each extending in the direction of travel and each having an edge in the direction of the substrate or roll;

the second seal comprising inner and outer walls each extending in the direction of travel and each having an edge in the direction of the substrate or roll;

the inner walls of the first and second seals disposed toward each other;

the outer walls of the first and second seals disposed away from each other;

the inner and outer walls of the first seal joined together at top ends thereof;

the inner and outer walls of the second seal joined together at top ends thereof;

the edges of the inner and outer walls of the first and second seals shaped to fit the substrate or roll.

3. (New) The apparatus of claim 2 wherein the inner and outer walls of the first seal are joined together at the back thereof, and wherein the inner and outer walls of the second seal are joined together at the back thereof.

4. (New) The apparatus of claim 2 wherein the first seal and the second seal are shaped to provide, at a point lined up with a trailing edge of the back seal, a clearance of approximately 0.001 inch to 0.008 inch with the substrate or roll.

5. (New) The apparatus of claim 2 wherein:

the first end seal is mounted to the nozzle by means of a flexible bracket; and

the second end seal is mounted to the nozzle by means of a flexible bracket.

6. (New) The apparatus of claim 2 wherein:

the top surface of the inner and outer walls of the first seal has a slope downwards from the horizontal in the range of 2 degrees to 10 degrees; and

the top surface of the inner and outer walls of the second seal has a slope downwards from the horizontal in the range of 2 degrees to 10 degrees.

7. (New) The apparatus of claim 2 further comprising coating fluid under a first pressure through the nozzle toward the substrate or roll;

the shape of the first end seal chosen to give rise to a second pressure of the coating fluid within

a pocket defined by the inner and outer walls of the first seal, the second pressure less than the first pressure;

the shape of the second end seal chosen to give rise to a third pressure of the coating fluid within a pocket defined by the inner and outer walls of the second seal, the third pressure less than the first pressure.

8. (New) The apparatus of claim 2 further comprising a drip pan positioned below the first end seal and below the second end seal.

9. (New) An apparatus comprising:

an elongated nozzle having an elongated opening defined along its length by a flexible back seal and a metering surface defined with respect to an upward direction of travel of a substrate or roll past the elongated opening, the substrate or roll having a width, the direction of travel such that the substrate or roll first encounters the flexible back seal and later encounters the metering surface, the elongated opening having first and second ends separated by a distance, the distance less than the width of the substrate or roll; the nozzle defining a back direction away from the substrate or roll and a front direction toward the substrate or roll;

a first end seal at the first end;

a second end seal at the second end;

the first seal comprising inner and outer walls each extending in the direction of travel and each having an edge in the direction of the substrate or roll;

the second seal comprising inner and outer walls each extending in the direction of travel and each having an edge in the direction of the substrate or roll;

the inner walls of the first and second seals disposed toward each other;

the outer walls of the first and second seals disposed away from each other;

the inner and outer walls of the first seal joined together at top ends thereof;

the inner and outer walls of the second seal joined together at top ends thereof;

the edges of the inner and outer walls of the first and second seals shaped to fit the substrate or roll;

the first end seal mounted to the nozzle by means of a flexible bracket; and

the second end seal mounted to the nozzle by means of a flexible bracket.

10. (New) The apparatus of claim 9 wherein the inner and outer walls of the first seal are joined together at the back thereof, and wherein the inner and outer walls of the second seal are joined together at the back thereof.

11. (New) The apparatus of claim 9 further comprising a drip pan positioned below the first end seal and below the second end seal.

Respectfully submitted,



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